

IN THE SPECIFICATION

Please amend the paragraphs of the specification as follows:

On page 1, please replace the first paragraph with the following paragraph:

This application is a continuation-in-part of co-pending Application Serial No. 09/892,378, filed June 26, 2001, entitled "Method and Apparatus for Selecting a Serving Sector in a Data Communication System," now U.S. Patent No. 6,757,520, issued June 29, 2004, and currently assigned to the assignee of the present application.

On page 2, please replace paragraph [1004] with the following paragraph:

A multiple-access communication system may be a wireless or wire-line and may carry voice and/or data. An example of a communication system carrying both voice and data is a system in accordance with the IS-95 standard, which specifies transmitting voice and data over the communication channel. A method for transmitting data in code channel frames of fixed size is described in detail in U.S. Patent No. 5,504,773, entitled "METHOD AND APPARATUS FOR THE FORMATTING OF DATA FOR ~~TRANSMISSION~~", TRANSMISSION," assigned to the assignee of the present invention. In accordance with the IS-95 standard, the data or voice is partitioned into code channel frames that are 20 milliseconds wide with data rates as high as 14.4 Kbps. Additional examples of a communication systems carrying both voice and data comprise communication systems conforming to the "3rd Generation Partnership Project" (3GPP), embodied in a set of documents including Document Nos. 3G TS 25.211, 3G TS 25.212, 3G TS 25.213, and 3G TS 25.214 (the W-CDMA standard), or "TR-45.5 Physical Layer Standard for cdma2000 Spread Spectrum Systems" (the IS-2000 standard).

On page 3, please replace paragraph [1006] with the following paragraph:

An example of a data only communication system is a high data rate (HDR) communication system that conforms to the TIA/EIA/IS-856 industry standard, hereinafter referred to as the IS-856 standard. This system in accordance with the IS-856 standard is based on a communication system disclosed in ~~co-pending~~ application serial number 08/963,386,

entitled "METHOD and apparatus FOR HIGH RATE PACKET DATA transmission," filed 11/3/1997, now U.S. Patent No. 6,574,211, issued June 3, 2003, and assigned to the assignee of the present invention. The communication system in accordance with the IS-856 standard defines a set of data rates, ranging from 38.4 kbps to 2.4 Mbps, at which an access point (AP) may send data to a subscriber station (access terminal, AT). Because the AP is analogous to a base station, the terminology with respect to cells and sectors is the same as with respect to voice systems.

On page 4, please replace paragraph [1007] with the following paragraph:

A significant difference between voice services and data services is the fact that the former imposes stringent and fixed delay requirements. Typically, the overall one-way delay of speech frames must be less than 100 ms. In contrast, the data delay can become a variable parameter used to optimize the efficiency of the data communication system. Specifically, more efficient error correcting coding techniques which require significantly larger delays than those that can be tolerated by voice services can be utilized. An exemplary efficient coding scheme for data is disclosed in U.S. Patent Application Serial No. 08/743,688, entitled "SOFT DECISION OUTPUT DECODER FOR DECODING CONVOLUTIONALLY ENCODED ~~CODEWORDS~~", CODEWORDS," filed November 6, 1996, now U.S. Patent No. 5,933,462, issued August 3, 1999, and assigned to the assignee of the present invention.

On page 4, please replace paragraph [1009] with the following paragraph:

Yet another significant difference between voice services and data services is that the former requires a reliable communication link. When a mobile station, communicating with a first base station, moves to the edge of the associated cell or sector, the mobile station initiates a simultaneous communication with a second base station. This simultaneous communication, when the mobile station receives a signal carrying equivalent information from two base stations, termed soft ~~hand-off~~ handoff, is a process of establishing a communication link with the second base station while maintaining a communication link with the first base station. When the mobile station eventually leaves the cell or sector associated with the first base station, and breaks the communication link with the first base station, it continues the communication on the

communication link established with the second base station. Because the soft ~~hand-off~~ handoff is a "make before break" mechanism, the ~~soft handoff~~ soft handoff minimizes the probability of dropped calls. The method and system for providing a communication with a mobile station through more than one base station during the soft ~~hand-off~~ handoff process are disclosed in U.S. Patent No. 5,267,261, entitled "MOBILE ASSISTED SOFT HAND-OFF IN A CDMA CELLULAR TELEPHONE SYSTEM," assigned to the assignee of the present invention. Softer ~~hand-off~~ handoff is the process whereby the communication occurs over multiple sectors that are serviced by the same base station. The process of softer ~~hand-off~~ handoff is described in detail in ~~co-pending~~ U.S. Patent Application Serial No. 08/763,498, entitled "METHOD AND APPARATUS FOR PERFORMING HAND-OFF BETWEEN SECTORS OF A COMMON BASE STATION", STATION, filed December 11, 1996, now U.S. Patent No. 5,933,787, issued August 3, 1999, and assigned to the assignee of the present invention. Thus, both soft and softer ~~hand-off~~ handoff for voice services result in redundant transmissions from two or more base stations to improve reliability.

On page 5, please replace paragraph [1010] with the following paragraph:

This additional reliability is not required for data transmission because the data packets received in error can be retransmitted. For data services, the parameters, which measure the quality and effectiveness of a data communication system, are the transmission delay required to transfer a data packet and the average throughput rate of the system. Transmission delay does not have the same impact in data communication as in voice communication, but the transmission delay is an important metric for measuring the quality of the data communication system. The average throughput rate is a measure of the efficiency of the data transmission capability of the communication system. Consequently, the transmit power and resources used to support soft ~~hand-off~~ handoff can be more efficiently used for transmission of additional data. To maximize the throughput, the transmitting sector should be chosen in a way that maximizes the forward link throughput as perceived by the AT.

On page 8, please replace paragraph [1024] with the following paragraph:

The term soft ~~hand-off~~ handoff is as used herein to mean a communication between a subscriber station and two or more sectors, wherein each sector belongs to a different cell. In the context of IS-95 standard, the reverse link communication is received by both sectors, and the forward link communication is simultaneously carried on the two or more sectors' forward links. In the context of the IS-856 standard, data transmission on the forward link is non-simultaneously carried out between one of the two or more sectors and the AT.

On page 8, please replace paragraph [1025] with the following paragraph:

The term softer ~~hand-off~~ handoff is as used herein to mean a communication between a subscriber station and two or more sectors, wherein each sector belongs to the same cell. In the context of the IS-95 standard, the reverse link communication is received by both sectors, and the forward link communication is simultaneously carried on one of the two or more sectors' forward links. In the context of the IS-856 standard, data transmission on the forward link is non-simultaneously carried out between one of the two or more sectors and the AT.

On page 9, please replace paragraph [1028] with the following paragraph:

The term soft/softer ~~hand-off~~ handoff delay is as used herein to indicate the minimum interruption in service that a subscriber station would experience following a handoff to another sector. Soft/Softer handoff delay is determined based on whether the sector, (currently not serving the subscriber station), (non-serving sector) to which the subscriber station is re-pointing is part of the same cell as the current serving sector. If the non-serving sector is in the same cell as the serving sector then, the softer handoff delay is used, and if the non-serving sector is in a cell different from the one that the serving sector is part of, then the ~~soft-handoff~~ soft handoff delay is used.

On page 9, please replace paragraph [1029] with the following paragraph:

The term non-homogenous soft/softer ~~hand-off~~ handoff delay is as used herein to indicate that the soft/softer ~~hand-off~~ handoff delays are sector specific and therefore, may not uniform across the sectors of an Access Network.

On page 9, please replace paragraph [1030] with the following paragraph:

The term credit is ~~[[as]]~~ used herein to mean a dimensionless attribute indicating a reverse link quality metric, a quality metric of a forward link, or a composite quality metric of both forward and reverse links.

On page 9, please replace paragraph [1031] with the following paragraph:

The term erasure is ~~[[as]]~~ used herein to mean failure to recognize a message.

On page 9, please replace paragraph [1032] with the following paragraph:

The term outage is ~~[[as]]~~ used herein to mean a time interval during which the likelihood that a subscriber station will receive service is reduced.

On page 9, please replace paragraph [1033] with the following paragraph:

The term fixed rate mode is ~~[[as]]~~ used herein to mean that a particular sector transmits a Forward Traffic Channel to the AT at one particular rate.

On page 10, please replace paragraph [1035] with the following paragraph:

Initially, the AT **104** and one of the AP's, e.g., the AP **100**, establish a communication link using a pre-determined access procedure. In this connected state, the AT **104** is able to receive data and control messages from the AP **100**, and is able to transmit data and control messages to the AP **100**. The AT **104** continually searches for other AP's that could be added to the AT **104** active set. The active set comprises a list of the AP's capable of communication with the AT **104**. When such an AP is found, the AT **104** calculates a quality metric of the AP's forward link, which in accordance with one embodiment comprises a ~~signal-to-interference-and-noise~~ signal-to-interference-and-noise ratio (SINR). In accordance with one embodiment, the AT **104** searches for other APs and determines the AP's SINR in accordance with a pilot signal. Simultaneously, the AT **104** calculates the forward link quality metric for each AP in the AT **104** active set. If the forward link quality metric from a particular AP is above a pre-determined add threshold or below a pre-determined drop threshold for a pre-determined period of time, the AT

104 reports this information to the AP **100**. Subsequent messages from the AP **100** direct the AT **104** to add to or to delete from the AT **104** active set the particular AP.

On page 12, please replace paragraph [1038] with the following paragraph:

At each time time-slot, the AP can schedule data transmission to any of the ATs that received the paging message. An exemplary method for scheduling transmission is described in U.S. Patent No. 6,229,795, entitled "System for allocating resources in a communication system," system," assigned to the assignee of the present invention. The AP uses the rate control information received from each AT in the DRC message to efficiently transmit forward link data at the highest possible rate. In accordance with one embodiment, the AP determines the data rate at which to transmit the data to the AT **104** based on the most recent value of the DRC message received from the AT **104**. Additionally, the AP uniquely identifies a transmission to the AT **104** by using a spreading code which is unique to that mobile station. In the exemplary embodiment, this spreading code is the long pseudo noise (PN) code, which is defined by the IS-856 standard.

On page 12, please replace paragraph [1039] with the following paragraph:

The AT **104**, for which the data packet is intended, receives the data transmission and decodes the data packet. In accordance with one embodiment, each data packet is associated with an identifier, e.g., a sequence number, which is used by the AT **104** to detect either missed or duplicate transmissions. In such an event, the AT **104** communicates via the reverse link data channel the sequence numbers of the missing data units. The controller **110**, which receives the data messages from the AT **104** via the AP communicating with the AT **104**, then indicates to the AP what data units were not received by the AT **104**. The AP then schedules a retransmission of such data units.

On page 13, please replace paragraph [1043] with the following paragraph:

In the exemplary embodiment, the above described the fixed rate mode and associated methods for transition to and from the fixed mode are similar to those disclosed in detail in U.S. Application No. 6,205,129, entitled "~~METHOD~~ METHOD AND APPARATUS FOR VARIABLE AND FIXED FORWARD LINK RATE CONTROL IN A MOBILE RADIO

COMMUNICATION ~~SYSTEM~~ ", SYSTEM", assigned to the assignee of the present invention. Other fixed rate modes and associated methods for transition to and from the fixed mode can also be contemplated and are within the scope of the present invention.

On page 14, please replace paragraph [1045] with the following paragraph:

FIG. 2 illustrates an exemplary forward link waveform **200**. For pedagogical reasons, the waveform **200** is modeled after a forward link waveform of the above-mentioned communication system in accordance with the IS-856 standard. However, one of ordinary skill in the art will understand that the teaching is applicable to different waveforms. Thus, for example, in accordance with one embodiment, the waveform does not need to contain pilot signal bursts, and the pilot signal can be transmitted on a separate channel, which can be continuous or bursty. The forward link **200** is defined in terms of frames. A frame is a structure comprising 16 time-slots **202**; each time-slot **202** being 2048 chips long, corresponding to 1.66 ms[.] time-slot duration, and, consequently, 26.66 ms[.] frame duration. Each time-slot **202** is divided into two half-time-slots ~~202a, 202b~~, 202A, 202B, with pilot bursts ~~204a, 204b~~ 204A, 204B transmitted within each half-time-slot ~~202a, 202b~~ 204A, 204B. In the exemplary embodiment, each pilot burst ~~204a, 204b~~ 204A, 204B is 96 chips long, and is centered at the mid-point of its associated half-time-slot ~~202a, 202b~~ 204A, 204B. The pilot bursts ~~204a, 204b~~ 204A, 204B comprise a pilot channel signal covered by a Walsh cover with index 0. A forward medium access control channel (MAC) **206** forms two bursts, which are transmitted immediately before and immediately after the pilot burst **204** of each half-time-slot **202**. In the exemplary embodiment, the MAC is composed of up to 64 code channels, which are orthogonally covered by 64-ary Walsh codes. Each code channel is identified by a MAC index, which has a value between 1 and 64, and identifies a unique 64-ary Walsh cover. One of the available MAC indices between 5 and 63 is used for reverse link power control (RLPC) for each subscriber station. The reverse link power control is modulated on a reverse power control channel (RPC). MAC index 4 is used for a reverse activity channel (RA), which performs load control on the reverse traffic channel. The forward link traffic channel and control channel payload is sent in the remaining portions ~~[[208a]] 208A~~ of the first half-time-slot ~~[[202a]] 202A~~ and the remaining portions ~~[[208b]] 208B~~ of the second half-time-slot ~~[[202b]] 202B~~.

On page 15, please replace paragraph [1046] with the following paragraph:

As discussed, the RPC channel is used to send the power control commands, which are used to control the transmit power of the reverse link transmission from an AT. Power control is critical on the reverse link because the transmit power of each AT is an interference to other ATs in the communication system. To minimize interference on the reverse link and maximize capacity, the transmit power of each AT is controlled by two power control loops. In one embodiment, the power control loops are similar to that of the CDMA system disclosed in detail in U.S. Patent No. 5,056,109, entitled "METHOD AND APPARATUS FOR CONTROLLING TRANSMISSION POWER IN A CDMA CELLULAR MOBILE TELEPHONE ~~SYSTEM~~", SYSTEM," assigned to the assignee of the present invention and incorporated by reference herein. Other power control mechanism can also be contemplated and are within the scope of the present invention.

On page 17, please replace paragraph [1052] with the following paragraph:

Consequently, if the AT sends a DRC request message to sector 1, it receives a higher throughput if the AT is served, but the likelihood of the AT being served is less than or equal to 20% because the Erasure Rate of RL1 is 0.8. If the AT sends a DRC request message to sector 2, the AT receives a lower throughput if the AT is served, but the likelihood of it being served is greater than or equal to 90% because the Erasure Rate of RL2 is 0.1. Therefore, the throughput from sector 1 is $614\text{kB} * 0.2 = 122.8\text{kB}$, and the throughput from sector 2 is $307\text{k} * 0.9 = 276.3\text{k}$. Clearly, the AT may gain from sending a DRC request message to sector 2.

On page 19, please replace paragraph [1057] with the following paragraph:

The power required for an RPC bit intended for ATs power controlled by a sector differ in accordance with the quality metric of the sector's forward link as measured at each of the ATs. An AT, receiving the forward link with better quality metric requires less power than an AT, receiving the forward link with worse quality metric. An allocation algorithm using DRC information to allocate power among the different ATs in proportion to the ATs' forward link quality metric is disclosed in detail in a ~~co-pending~~ application serial number 09/669,950,

entitled "Method and Apparatus for allocation of power to Base Station ~~channels~~", channels," filed September 25, 2000, now U.S. Patent 6,678,257, issued January 13, 2004, and assigned to the assignee of the present invention. Because the sum of the powers of all medium access control channels is finite, the power allocated for the RPC bit to the AT experiencing low quality metric of a sector's forward link can be insufficient for a reliable reverse link power control.

On page 20, please replace paragraph [1060] with the following paragraph:

One of ordinary ~~skills~~ skill in the art understands that extension to more than two sectors yields more variants. For example, only the sector with the highest forward link quality metric may be provided the power control commands from the reverse link with the highest quality metric. In another example, the two sectors with the highest forward link quality metric may be provided the power control commands from the reverse link with the highest quality metric. All these variants are contemplated as being within the are within the spirit and scope of the present invention.

On page 21, please replace paragraph [1062] with the following paragraph:

One of ordinary ~~skills~~ skill in the art appreciates that a choice of 'n' and 'm' is communication system dependent. Furthermore, other methods for determining imbalance are equally applicable, and can be utilized without departing from the spirit or scope of the invention.

On page 22, please replace paragraph [1065] with the following paragraph:

Those of ordinary ~~skills~~ skill in the art would understand that information and signals may be represented using any of a variety of different technologies and techniques. For example, data, instructions, commands, information, signals, bits, symbols, and chips that may be referenced throughout the above description may be represented by voltages, currents, electromagnetic waves, magnetic fields or particles, optical fields or particles, or any combination thereof.